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L27 ANSWER 1 OF 2 MEDLINE

AN 1999007514 MEDLINE

DN 99007514

T1 Anticariogenic complexes of amorphous calcium phosphate stabilized by casein phosphopeptides: a review.

AU Reynolds E C

CS School of Dental Science, University of Melbourne, Australia.

SO SPECIAL CARE IN DENTISTRY, (1998 Jan-Feb) 18 (1) 8-16. Ref: 61

Journal code: U99. ISSN: 0275-1879.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

General Review; (REVIEW)

(REVIEW, TUTORIAL)

LA English

FS Dental Journals; Dental

EM 199901

EW 19990104

AB Using laboratory, animal, and human in situ caries models, investigators have shown that casein ***phosphopeptide*** amorphous ***calcium*** ***phosphate*** complexes (CPP-ACP) exhibit an anticariogenic activity. The casein ***phosphopeptides*** (CPP) are produced from a tryptic digest of the milk protein casein by aggregation with ***calcium*** ***phosphate*** and purification by ultrafiltration. The CPP have a remarkable ability to stabilize ***calcium*** ***phosphate*** in solution and substantially increase the level of ***calcium*** ***phosphate*** in dental plaque. Through their multiple phosphoseryl residues, the CPP bind to forming clusters of amorphous ***calcium*** ***phosphate*** (ACP) in metastable solution, preventing their growth to the critical size required for nucleation and precipitation. The proposed mechanism of anticariogenicity for the CPP-ACP is that they localize ACP in dental plaque, which buffers the free calcium and phosphate ion activities, thereby helping to maintain a state of supersaturation with respect to tooth enamel depressing demineralization and enhancing remineralization. The CPP-ACP, unlike ***fluoride***, can be added to sugar-containing foods and therefore have commercial potential as an additive to foods as well as to toothpastes and mouthwashes for the control of dental caries.

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Sent:
To:

Lukton, David
Tuesday, January 25, 2000 1:53 PM
STIC-ILL

David Lukton
308-3213
AU 1653
SN 09/380738

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